

REMARKSInformation Disclosure Statement (IDS)

A Paxton et al. article preprint was brought to the attention of the Examiner within the previously submitted IDS. The publication date is as follows: J. Am. Chem. Soc., 126 (41), 13424 - 13431, 2004. Web Release Date: September 21, 2004, Copyright © 2004 American Chemical Society, "Catalytic Nanomotors: Autonomous Movement of Striped Nanorods", Walter F. Paxton et al., Received April 21, 2004. This article was both submitted and published after filing of the present Application.

Allowable Subject Matter

Claims 15 – 22 were allowed by the previous Office Action.

Claims 13, 25, 26, 34 – 36, and 39 – 41 were objected to as being dependent upon a rejected base claim, but as allowable if rewritten in independent form including all limitations of the base claim and any intervening claims.

Claims 13, 25, 34, 36, and 39 are rewritten in independent form including all limitations of the base claim and any intervening claims, so that these claims are allowable.

Claim Objections

Claim 1 is objected to as including improper use of "provides". Claim 1 is amended to include the word "that" so as to overcome this objection.

Claim 19 is objected to as being of improper dependent form. Claim 19 is amended to overcome this objection.

Claim Rejections – 35 USC 102/ 35 USC 103(a)

Claims 1 and 12 stand rejected as either anticipated by or obvious over Montemagno (WO00/22101).

Claims 1 – 11, 14, 23, 24, 27 – 33, 37, 38, and 42 – 44 stand rejected as either anticipated by or obvious over Ismagilov (Angew. Chem. Int. Ed. 2004).

Regarding claims 1 – 12 and 14, claim 1 is amended to refer to the catalyst region including a transition metal, the adjacent non-catalyst portion including a gold surface, the chemical reaction inducing a flow of the fluid medium from the catalyst region to the adjacent non-catalyst portion. Support for this amendment is found in as-filed claims 2 and 5. Claims 2 and 5 are canceled.

Neither Montemagno nor Ismagilov discloses a method of providing a relative motion between a microstructure and a fluid medium, comprising providing a catalyst region within the microstructure; providing a non-catalyst region within the microstructure, the non-catalyst region having an adjacent non-catalyst portion that is substantially adjacent to the catalyst region; providing a fluid medium, the fluid medium having a fluid component that provides a chemical reaction, the chemical reaction being catalyzed by the catalyst region; and exposing the microstructure to the fluid medium, so that the catalyst region and the adjacent non-catalyst portion are both exposed to the fluid medium, the chemical reaction inducing the relative motion between the fluid medium and the microstructure, the catalyst region including a transition metal, the adjacent non-catalyst portion including a gold surface, the chemical reaction inducing a flow of the fluid medium from the catalyst region to the adjacent non-catalyst portion.

Montemagno fails to disclose a metal-containing microstructure.

Ismagilov fails to disclose an adjacent non-catalyst portion including a gold surface substantially adjacent to the catalyst region. Further, Ismagilov fails to disclose the chemical reaction inducing a flow of the fluid medium from the catalyst region to the adjacent non-catalyst portion. Ismagilov describes the generation of bubbles to propels the structure through the fluid medium, and not the generation of a flow of the fluid medium from the catalyst region to the adjacent non-catalyst portion.

Regarding claims 23, 24, 27, and 28, claim 23 is amended to refer to the non-catalyst region including a gold surface, the non-catalyst region being substantially adjacent the catalyst region, the chemical reaction inducing a flow of the fluid medium from the catalyst region to the non-catalyst region.

Claim 23 is allowable for the reasons given above in relation to claim 1. Hence claims 23, 24,

27, and 28 are allowable over the cited references.

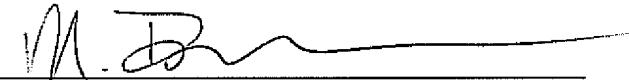
Regarding claims 29 – 33, and 42 – 44, claim 29 is amended to include the limitations of claim 41. Claim 41 was indicated by the Office Action to be allowable if rewritten in independent form including all limitations of the base claim and any intervening claims, so that claim 29 and its dependent claims are allowable.

Regarding claims 36 and 37, these claims are amended to depend from claim 34. Claim 34 is amended to be in independent form, and was indicated by the Office Action to be allowable.

Regarding claim 40, this is amended to depend from claim 39, and hence is allowable for the reasons given for claim 39.

Based on the above amendments and remarks, allowance of all claims is respectfully requested. Questions may be directed to Applicant's below-signed representative at the telephone and/or facsimile numbers provided below.

Respectfully submitted,

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